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A REPRINT

OF THE

REPORT ON SURGERY,

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SECTION ON SURGERY.

REPORT OF THE CHAIRMAN FOR 1884-85.

BY E. J. BEALL, M. D., FORT WORTH, TEXAS.

PART I.

Should I only partially, and in a very brief manner, review the surgery of the past twelve months, you will doubtless moderate somewhat your criticisms for presenting matters with which live, reading surgeons are presumed to be more or less familiar. That the members of this Association are wide-awake, energetic workers in the profession, the work they have done, and are doing, fully attests. But for this well-known fact being conceded, I should indeed be subjected to criticism for any intimation that would characterize you, conjointly, as being other than reading, thoughtful co-workers with the professional brethren elsewhere in the great work of surgical progress.

If, however, after the above acknowledgment, I should weary you by presenting anything which may have already been read by one or more individually, then will be left me the reflection that medical men are noted for dispensing mantles of charity, and I shall claim one for myself, predicated upon the suggestion that there are in our Association members, less for-

tunate than others, who have not been favored with facilities which enabled them to keep abreast with the constantly changing innovations and events in the science and art of surgery. To this class I refer a portion of the matter and manner of this writing.

Whilst the now completed year since the meeting of this body has not been marked by any very notable advance or event in surgery, if we except that of Cocaine therapy, by Koller (to be referred to hereafter), the *annus chirurgicus* from April, 1884, to April, 1885, has been one of much interest. Retrospective observers will look upon the year as memorable for having been the "Inter-National Medical Congress year," at which congress representatives were attracted from every civilized country on earth, many of whom were the nestors of medicine and surgery in the countries from whence they came. Our daring, quick, inventive American brethren clashed in mental conflict with the German brother and his tenacity and transcendentalism; as well, the slow, plodding, but sure Englishman, and the irrepressible, imitative Frenchman. At this great inter-national convocation, race was unthought of, politics and religion left for other minds, theirs being wholly engrossed for the good and advancement of a noble profession, having for its end the common good of mankind.

Many papers of scientific and practical interest have emanated from the medical press; new works of value have been issued, and further volumes of works already begun have appeared, as well as new editions of older works which, in prior editions, had won repu-

tation for the minds that conceived them, and had proven of incalculable benefit to many readers and practitioners of the science and art to which they related.

The great absorbing subject of antiseptic surgery has been further sustained almost everywhere, until it might now be said with much propriety and assurance, that the past year has so completely confirmed the experiences of past observers, that indeed a new surgery which was dawning is now a surgery at noon-tide; that scarcely an opponent is left, forced by the accumulation of evidence, by the piling of Pelion upon Ossa, to kick against the pricks not any longer.

The brilliant operations of Czerny, Billroth, Bergman, Kocher and others upon the stomach and intestinal tract, eclipsing in an operative way the wonderful procedures of the followers of McDowell, are still being executed. That these operations have received the approval of the conservative surgical element of this country, I believe not to be the case. These bold and dangerous procedures can only, at best, protract the life of the sufferer from the malignant distempers for which they were devised; and, I think, should be reserved for execution only by the steadiest hands and coolest heads known to the profession; and, then, only at the election of the sufferer, and when the surgeon is environed by everything science and art can furnish and experience dictate. There is, however, justification to the surgeon who, like Esmarch, is conscientious in the belief of the local theory, primarily, of malignant disease; and this class may yet establish

the legitimacy of the operation. Very nearly related to the last, and differing only in location, are the malignant diseases of the rectum ; and on this subject, too, are dual opinions held, based upon a pathological theory that obtains in regard to diseases of the upper intestinal tract, and for the relief of which two plans are suggested—one, the removal by operation of the disease ; the other inclining to the adoption of a palliative, tentative plan—that of lumbar colotomy—and notably amongst the latter class will be found Mr. Bryant, of London.

Much interest of late has arisen, and able men are reviving operative proceedings for the radical cure of hernia, consisting of excision of the sac and ligature of the neck under antiseptic treatment. This course has been strenuously urged by a number of English and Irish surgeons ; and, whilst they are very strong in the advocacy of the measure, yet many surgeons (as in the past) consign such cases to the truss vendor. I believe the operation justifiable under the new surgery, and will, in the near future, become well and permanently established and recognized. In referring to the operation, excision of the sac and ligature of the neck, Mr. Keetly says : “ Quite enough experience has accumulated to show that this form of operation has now established itself permanently ; or, at all events, it will last in professional favor until a better shall have supplanted it.” He doubts whether the rapidly accumulating literature of the subject conveys a proper idea of the real dangers of the operation for the radical cure of hernia. He commends the honesty of Mr.

Edwards in publishing a fatal case, and thinks others have occurred. He reiterates that the operation is established upon a scientific and practical basis, but ventures a word of warning to those who undertake its performance. Besides the danger of a vitally important ligature giving away, or of septic infection, there are particular troubles and dangers to obviate, of which the most constant and serious depend upon the relation of the cord to the sac when the hernia is inguinal. He further says that the sac may be separated from the vas deferens, but the other constituents of the cord are more likely to go with the sac than with the vas deferens, to which they more correctly belong. Then follows trouble with the testicle; perhaps orchitis; perhaps suppuration, or even gangrene; and a proceeding leading to these will sometimes lead a little further—that is to say, to a fatal result. One surgeon has suggested to simplify the operation by taking away testicle, cord and sac together. Keetly thinks there are testicles which are useless to their possessors, just as there certainly are testicles which are much worse than useless; but it becomes little better than a mere matter of guessing when the surgeon has to ask himself what is the value of a given gland. It is easy to see how, in a moment of great embarrassment, the operator might fail to give the testicle the benefit of a doubt. Indeed it is particularly easy to estimate lightly the importance of another man's testicle. After further alluding to other dangers from orchitis, Mr. Keetly sums up his position as follows: A new field of practical surgery has been opened up, the exploration o

which must yield rich results, but in it are many pitfalls, the existence of which has scarcely been emphasized sufficiently and mapped out by enthusiastic pioneers. Let every surgeon beware of them.

Mr. Tait's suggestion to open the abdominal cavity for strangulated hernia, and relieve the stricture via the cavity (though attended at his hands by splendid results) has not impressed the profession favorably. Indeed, I know of no case in which the operation has been repeated; and it will require further experience to establish it as a recognized measure, however little dread surgeons have now-a-days, in other operations, for opening the abdominal cavity.

As referring to the subject of hernia, I would especially call the attention of the profession to a simple expedient of Dr. Stewart, of Chicago, in the management of strangulated hernia, after taxis had failed. His plan consists in the dilation of the constriction which produces the strangulation at the abdominal ring, by passing the finger along the inguinal canal and carrying the integument before it until the constricting ring is felt. The finger is then to be gently insinuated into the opening, and gentle pressure made upon the upper border of the ring until it is felt to give away. Then the resort to taxis is usually successful. Dr. Hurd, of Long Branch, and Dr. Greene, of the same place, have met with the same good results in this simple procedure. I commend the plan to the Association as well worth remembering, and putting to the test should occasion present.

Another simple expedient I think worthy of revival,

first suggested in the "long ago" by a member of the profession at Pittsburg, whose name I cannot now recall. It is to suspend the patient, head to the floor, and legs flexed over the shoulders of a strong man (the patient being relaxed by an anesthetic or other agent), and the taxis essayed. By this plan, in several instances, my efforts have been crowned with success, when failure followed other measures.

Nephrectomy, for various pathological conditions of the kidney, has been now so repeatedly and successfully done as to have well established the propriety of the operation. The only question at issue is the greater success as to results when comparing the lumbar incision with that of a laparotomy. It is safe to infer that in less than half a decade this question will be settled.

An operation upon the gall bladder, cholecystomy, has also of late years engaged the minds of surgeons; and there are now unsettled differences of procedure at issue; and I only refer to the unsettled issue to place on record my emphatic disapproval of the suggestions of Dr. Gaston, of Georgia, as I understand him, in relation to the operation, and I think the future will not develop that his suggestions are sustained.

One other reference to the surgery of the abdomen, and I am done with that absorbing and important region; and, as I am writing this paper away from my library, without books or journals (save two or three), much will be, and has been written, drawn from the treacherous storehouse of memory.

By whom first suggested, I cannot now recall; yet I well recollect that Dr. Sims, of New York, Dr. Gross, of Philadelphia, and Dr. Hunter McGuire, of Virginia, some years ago, wrote advising the abdomen to be opened in cases of certain injuries. The indications are that this plan will become the surgery of the future. The impunity with which gynecologists have opened the abdominal cavity for various purposes (even as an explorative measure), not only lends an argument in favor of its adoption for the repair of injuries, but also doubtless led to the suggestion of the propriety of the measure; and, according to the thinking of some, under certain circumstances it became the imperative duty of the surgeon to do so, in order that he might avert a lethal termination, which was the rule, and not the exception, under a former line of treatment.

In cases of gunshot wounds, penetrating wounds, etc., when injury to vessels, the viscera, the peritoneum, etc., existed, what, under a former practice or regime, were the chances of recovery? Very few indeed! As a rule, it was death.

Guided by the suggestion of opening the cavity (in itself, under anti-septic precautions, comparatively a harmless measure), vessels could be ligated, wounds of the intestines could be approximated by Lembert's suture, the peritoneum could be cleansed, dried and drained, and thereby, it is thought, death averted. So well satisfied am I of the propriety and necessity of the measure, that (predicating upon what I have observed in former years in my own, as well as in the

practice of others), I am forced to the conclusion that conscientious duty will urge me to adopt the suggestion whenever a proper case shall come under observation. Much could be said upon this subject. The profession is much divided in opinion in relation to the measure, and I leave it to you for discussion and reflection.

Many years ago, Dr. Willard Parker, of New York, suggested the opening of the bladder by perineal sections in cases of chronic vesical catarrh. The last time I had occasion to examine the subject his suggestion had been adopted by quite a number of operators. In cases of cystitis, other means having failed (and such cases will occur now and then), it behooves the surgeon to adopt this measure. The bladder is thereby placed at rest; muscular contraction in response to muscular irritation is allayed; the opening in the bladder is kept patent, thus enabling the surgeon to apply direct medication; and, generally, immediate comfort and relief is afforded as the result; and a perfect cure has not been infrequent. Cases requiring this means are of common occurrence, and I unhesitatingly endorse the propriety of the measure. There is little danger, and no extraordinary skill requisite for its execution.

A similar section has been suggested and done, and prominent amongst the operators are Sir Henry Thompson, Stein, Weir and others, for papillomatous, epitheliomatous and other growths inside the bladder. The relief has been very marked in the majority of cases, and many complete cures have occurred as a sequence.

Early last year, I had occasion to perform this operation upon a countryman of mine for a long and persistent cystic disease. I did not know to a certainty what I might find after the section. The diagnosis was very far from being satisfactory. I thought, however, I should encounter a neoplasm of some kind, implicating the prostrate gland, connected with cystic disease—so expressed myself. The sequel shows, though the diagnosis was somewhat off, it was not very discreditable. Any way, the patient was clamorous for relief. He had exhausted the professional skill of the country for years, as well as the suggestion of the laity. He had, indeed, made an apothecary shop of his stomach, from stigmata maidis to—I had almost said—Aunt Babb's remedy (toads stewed in May-butter), and yet no relief came. He was using larger and larger portions of various anodynes. In fine, his condition was so extreme that he was ready and anxious to adopt any measure, by whomsoever made, even should he receive only temporary relief from the efforts essayed for the amelioration of his sufferings. I, therefore, opened the bladder by the ordinary lateral lithotomy section. I found by digital examination, after nicking and dilating through the prostatic uretha, an elevation in the gland, but little tissue intervening betwixt my finger and a hard substance. After a slight incision, as it were through a capsule, I removed an irregularly shaped prostatic calculus, weighing perhaps thirty grains or more, and additionally a soft neoplasm (probably papillomatous) at the lower posterior part of the middle segment of

the bladder, approximating the size of a partridge egg. This I gently curretted off with Thomas' curette. Immediate relief from pain followed the operation, and hopeful expressions of an early recovery were indulged in by the man who had suffered so extremely and so long. It was directed that his bladder be irrigated daily with warm boric acid and water, and medical and dietetic suggestions were given as seemed best suited to the case. I could hear occasionally of his condition—now better, then worse, in mind alternating between hope and despondency, and, when forty or fifty days had gone, he died, whether from recurrence of the bladder disease, consecutive trouble growing out of the operation, or intercurrent or post-operative disease having no relation to the condition for which relief was sought by the operative measure mentioned, I am not informed. It has been well said that tumors of the bladder, if let alone, necessarily terminate in death, the percentage of recovery after operation being so great as to have now established the operation upon a firm basis.

Physiological experiments by Mass, Ollier and others, having determined that the preservation of the marrow in bones was not essential for repair after fracture, has, in connection with the antisepticism of later years, led many surgeons to adopt conservative operations, which have been followed by results such as to commend the subject to our serious consideration in many cases which, heretofore, would have been consigned to amputation. Bleckwenn, Stoll, Konig, Kiesler, Keetly and others have given us splen-

did results in cases of osteo-myelitis, in which the medulla of even the entire shafts of femur and tibia have been removed; and, under powerful treatment with germicidal drugs, the procedures have been followed by little constitutional reaction or danger to the life of the bone. In some few cases in which epiphysial disease complicated osteo-myelitis, resection has been practiced, an opening made in the shaft with a trephine, and, after scraping out the medulla, a drainage tube was passed, followed by recovery, with useful limbs. After amputations in five cases Petrouski has, on account of osteo-myelitis, scraped out the stump and filled it with iodoform, and perfectly good results have ensued.

During the past year I was consulted by a patient from Wise county, who had suffered intense pain at the middle of the thigh. From loss of sleep and severe pain he had become very much reduced—looked bad. He had been treated for rheumatism, neuralgia, etc. The intense pain caused quite a limp when he endeavored to walk. After study and reflection over this case, I concluded he was the subject of an osteo-myelitis. He was surprised when I suggested an operation, no external manifestations existing to show to his mind the necessity for such a procedure: he, however, very readily gave way to my suggestion. I made an incision down upon the bone, and with gouge worked through the bone and discharged broken down medullary material, gouged with Volkman's spoon as thoroughly as practicable through this opening, irrigated with sublimate solution, and stuffed well daily

with iodoform gauze. Relief from pain soon followed, sleep and appetite were restored, and, after a short while, the patient returned to his home, and has since had no trouble.

A few weeks ago I had occasion to operate upon the tibia of a young lady at Fort Worth, which well illustrates reparation for extensive disease of bone, as well the usefulness of anti-septic surgery. The bone was very much enlarged by new growth surrounding a *seques'trum* the entire length of the shaft; extensive disease of the superior epiphysis.

There were ten cloacæ scattered along the bone; and from each there was free suppuration of long standing. I cut down upon the bone at three different places, enlarged the cloacæ, cut through the continuous sequestrum, and removed it in pieces. It was needed to scoop out the epiphysis, as well as several channels along the shaft. The cavity was well irrigated with sublimate solution, which would flow the entire extent of the intra-osseous cavity left after removal of disease. This was well dusted with iodoform and stuffed with sublimate gauze. The daily repetition of this dressing ultimated in filling of the artificial canal (as it were) with dense, healthy new bone material with atrophy of the surrounding bone which nature had conservatively thrown around the disease. This operation was preferable to amputation, as we now know, under modern practice, we may prevent the systematic infection which, under the older surgery, is so prone to follow such extensive operations upon bone, and especially when the epiphysis is so

prominently involved as obtained in the case referred to here.

A very interesting subject, and one which is now receiving great attention from very many able minds in the profession, is that of tuberculous surgical diseases. Dr. Park, of Buffalo, has lately reviewd the subject exhaustively ; and his article is commended to the members of the Association. Such men as Charcot, Konig, Menard, Mozling and others will be found among the original workers on this subject. To epitomize from above: We have heretofore entertained quite a vague idea concerning the nature of many diseases seen in every-day professional life, and the surgeon-pathologists to whom I have referred have now demonstrated their tuberculous character, and we may fairly conclude that their teachings will be accepted in the future.

It is stated that in all of the following examples inoculation experiments have determined their infectiousness, and the characteristic bacilli have been found :

1. Cutaneous tuberculosis, as represented by lupus.
2. Tuberculosis of mucons membranes, as ulceration of tongue, mouth, larynx, intestines, etc.
3. Tuberculosis of muscular or inter-muscular connective tissue, as nodules and cold abscesses.
4. Periosteal tuberculosis, as periosteal cold abscesses, chronic periostitis, suppurative osteo-periostitis, etc., various forms of tuberculosis of bone, known as caries, chronic ostitis, serofulous ostitis, etc.

5. Tuberculosis of joints, as the common tumour albus, fungus arthritis, etc.

6. Tuberculosis of glands—various chronic caseous or suppurative forms of adenitis.

Trans-Atlantic literature is rich in the studies of this subject; and, to one having the time and inclination, an interesting field is opened up.

The subject of Charcot's disease has lately engaged the Clinical Society of London, and widely differing opinions were expressed in regard to that complex trouble. Dr. Marsh thought the profession possessed of so little knowledge of osteo-arthritis that it was difficult to determine whether or not a connection existed between the ataxic and joint diseases. Drs. Paget, Humphries and others thought the disease was likely chronic rheumatic arthritis modified by locomotor ataxia. Smith, Barwell, Broadbent and others held that no connection whatever existed between the conditions mentioned. We may safely infer from the discussions that the disease is still *sub judice*, and that time may yet explode the idea of the great French neurologist, and his name may yet be removed from the disease to which some observers have attached it.

No event in surgery during the past year has created such an interest—such a furor, one might say—as that of cocaine, or Kollerism. When Koller reported the effects of the article before the Ophthalmological Congress last fall, in Europe, and Dr. Henry Noyes, of New York, who was present at the time, sent his memorable letter to the *Record*, American surgeons everywhere became enthused to a degree that is with

out precedent in surgical annals. I will not except the use of ether, or chloroform, or vaccination, for these great and tried agents for the amelioration and prevention of human suffering slowly and gradually assumed their places amongst the great epochs along the road of professional progress. Not so with cocaine. In two days after Noyes' letter was published, the supply of the article was exhausted in New York, the laboratories were set going, the lightning flashed over the wires to the cradle of its birth, and the drug shops of Europe were drawn upon. As fast as received or made, it was forwarded by mail and express to the remotest nooks and corners of the American continent. Physicians and surgeons seemed to slacken the dignity of the profession, and even solicit cases upon which to try the great new remedy. One reading the journals for a time would infer that all else in the profession was lost sight of; that the dream of the alchemist had at last been realized. From first being used in operations upon the eye and throat, the article has engrossed every other specialism; has pervaded every branch of the profession; has been experimented with for almost all the ills with which human nature is afflicted, as well essayed for the relief of the pain of disease and operations of almost every kind and nature.

Very conflicting reports have come to us through the journals; whether growing out of the quality or manner of using the article, sufficient time has not yet elapsed to enable the profession to determine. My own use of the article has varied. In some cases

the effects have been highly satisfactory, in some negative. So much has been written ; and, as the physiological effects and therapeutic uses are not thoroughly settled, I leave the subject with you, not wishing to disturb any opinions you may have formed from reading or experience, and believing that you will hear more from the article from other branches than the one I here represent, ere this convention shall close at Houston.

Gentlemen, the scope of this paper admonishes me that I can only refer, and that very briefly, to a few features connected with the surgical year just closing. The very few to which I have simply adverted, I have been able in some instances to couple with brief reports of cases occurring in my own practice, and related to the subjects to which your attention has been directed. It is very interesting to the student of medicine to scan the literature of his profession for a season, compare his own work with that of the masters, and keep an eye on their work ; for he cannot know at what moment the original work of another may serve him in honor and conscience, and his constituency in benefit. I will therefore close this report after a few paragraphs upon the subject of antiseptic surgery supplemented by brief reference to a few interesting cases from my every-day practice illustrative of that mode of wound treatment.

ANTISEPTIC SURGERY.

The treatment of wounds, whether the result of accident or following the knife of the surgeon, alike con-

stitutes the grandest work that has ever occupied the minds of our profession since the world began. While surgery has always been considered a noble art, it may, considering the subject of wound treatment, be considered likewise a noble science. Disease may baffle the skill of the physician ; he may empirically plod apace with disease through day's and weeks to death's door ; but the surgeon, with the brighter lights of a new era, can confidently and constantly assert the nobility of his art and science when applying it to the preservation and perpetuation of human life jeopardized by injury. This assertion could not have been made so emphatically and boldly thirty years ago. Whilst advanced anatomical knowledge and improved skill and instruments at that time enabled the surgeon to improve the results of an anterior time, no candid and philosophical student of wound treatment of to-day, when he reflects upon the views and practices of the past, but must conclude that a new era is indeed upon us. Results force the acknowledgment, though he may hope for greater perfection in the future.

Why this change ? Is not man physically now as then ? Though his anatomical knowledge is increased, though his armamentarium is improved, are these things sufficient to account for the grander results that are now attained ? Man's physical organization is perhaps without change. That his knowledge has increased through the years, and that his means for work have improved, are admitted. Such are but factors in the solution ; it is to anti-septic surgery, to Lister's mind that conceived, and to hundreds of

others catching the inspiration and making improvements, which has led to our present advancement and degree of perfection. If it be acknowledged that a greater degree of perfection has been attained in wound treatment—that operations under that procedure may be executed which had hitherto been avoided, and the knee joint, the peritoneum, the pleura, etc., parts considered so vulnerable in the past, are now operated upon with success—why do we see so many surgeons clinging to the practice of a past age? Why is such the case in America—in Texas? In my own town and county, if a wound or an operation has ever received antiseptic treatment except by one or two practitioners, I have no knowledge of the fact. It is not so in Europe, in England; it is not so in New York or Philadelphia. All the celebrated surgeons of those countries and places no longer perform operations without antiseptic precautions. And why? Because experience has demonstrated that results are better. No longer pyæmia, septicaemia, exhaustion from prolonged suppuration, erysipelas, phlebitis and infectious diseases of serous membranes follow their efforts. Let me call your attention to evidence of which I know you have knowledge. You have heard it and read it: but have never profited by it. In 1874, Volkman was at the point of demanding the closure of his clinic. His wards were in such an unsanitary condition as that he lost from pyæmia twelve cases out of sixteen of comparatively simple cases of compound fractures. In 1877, with Listerism, of seventy-five complicated fractures, seventy-three recovered.

Billroth, Bruns and Bardeleben performed three hundred and seventy-seven amputations after the old surgery, with twenty-nine and one-fourth per cent. mortality; Bush, Schede and Volkman three hundred and twenty-one by the antiseptic method, and only four and four-tenths per cent. died. Volkman treated thirty-one wounds of joints, two incisions into joints, and twenty-one compound fractures entering into joints, antiseptically, with no death.

Such statistics as the above could be furnished sufficient in number to fill a book as large as your last year's TRANSACTIONS. It is unnecessary.

You have only to watch the current medical literature of the day, and such works as Nancrede's and others' upon wound treatment, and you will find much to substantiate that which I have presented.

Lawson Tait and a few others have endeavored to throw a shadow over the laurels of Lister, in order to make their own names more famous. But, tell me this: Why does Tait require assistance even to wash his sponges, and a woman at that? Why does he use hot water? It is alike antiseptic, and certainly aseptic, as it possesses the power of coagulating albumen, and in that way prevents ingress into the stoma of lymphatics and veins, thereby avoiding, measurably, the consequences that a somewhat different process (enlarged and extended, it is true) is intended to prevent. Why does he constantly clean out closets, take up carpets, wash and scour, if he fears not the effect of an unseen foe? If cleanliness were all that success demands, a dirty set of fellows must many

doctors have been, whose success has been so eclipsed by this modern paradoxical advocate of tap-water.

I think the number who oppose the modern treatment of wounds so far in the minority (and with that minority the "method in their madness" might be exposed if the "inwardness" of such could be known) that this fact does not present an argument for new opposition upon the part of any one without personal experience. It is said by one that there is much trouble in carrying out the treatment. Such is not the case. Under the old surgery, one must needs dress a wound daily, or oftener; under the new surgery, only once in three to ten, yea, twenty days. Another says, "it is expensive." Not so. The material needed is cheap. One can prepare in a short while, as good as can be made anywhere, sufficient for a month's work. It is cheaper, because one dressing takes the place of a dozen or more under the old plan. Should one not wish the trouble of preparing his dressings, any druggist can order from manufacturers, as Am Ende, of Hoboken, or Seabury & Johnson, of New York. And when the physicians shall use the dressings to a greater extent, home druggists will keep supplies adequate to the demands of the local trade.

If antiseptic surgery neither increases the labor of the surgeon nor his expense; or, if it should, it becomes the duty of all to investigate results; and if he is forced to the conclusion that it enhances the chances of a patient, however lowly in caste, its adoption becomes obligatory upon him; and a case dying, if death could have been prevented by perfect asepsis or anti-

sepsis, then indeed does he become criminally negligent. Only a short while ago, I noticed that a criminal prosecution had been instituted against a physician in Germany because death ensued in a case in which the practice under consideration was not followed.

It will not be uninteresting to advert very briefly to the facts connected with, or which led to the adoption and pursuance of modern treatment of wounds by Lister and his followers; and, in doing so, if facts presented in substantiation of the hypothesis upon which the early advocates of asepsis and antisepsis in wound treatment predicated, should post date its advent, then it will only confer the greater credit upon the originators.

It is pretty well conceded at this time that the *materies morbi* of many diseases are to be looked for, or have been found at the boundary line between the animal and vegetable kingdoms. Bacteriologists have given different names to these micro-organisms, predicated upon shape and mode of propagation. Two theories have been advanced in recognition of the morbid activity of these organisms: one, that the cause of disturbance is the organism itself, and its multiplication into colonies; the other, that it is not the organisms themselves, but the products or ptomaines formed in the course of their multiplication and growth, either directly secreted by themselves or formed by the decomposition of the substances upon which they feed. These micro-organisms or their products are the septic

agents, and the result of their effect upon the tissues constitutes sepsis.

The generic term bacteria has been given to these micro-organisms. Very few, now-a-days, will question the correctness of the conclusions of Koch as regards the tubercle microbe, the micrococci of gonorrhœ, the micro-organism of croupus pneumonia discovered by Friedlander, the comma bacillus of cholera, that of anthrax, mumps, influenza, etc. Many of these micro-organisms have been found and cultivated, and but little doubt exists in the minds of the majority of scientists concerning the conclusions arrived at in connection with them. Klebs has proven that micrococci cause septic cysto-pyelonephritis; Rindfleiset and others have demonstrated and cultured those causing septicæmia and pyæmia; Looke and Koohn, those inducing osteo-myelitis, and Nepren, Oeth and Billroth, those of erysipelas. The cause of septic endocarditis has been shown to be due to micrococci colonies.

These facts are admitted, for such is the basis of aseptic and antiseptic wound treatment. In the first instance it is needed to prevent wound contamination by using clean instruments, clean hands, clean everything; by resorting to means which render every object in relation to a wound aseptic, and thus is sepsis prevented. If, in the second place, a wound is already contaminated, is septic, to render it aseptic as soon as practicable by recognized antiseptic treatment. The plan suggested by Lister to accomplish these ends is familiar to most surgeons.

Very many changes and innovations having the same object in view have been devised and practiced by others, and, as time passes, improvements are constantly being made and perfection is being more nearly attained. I can only refer to iodoform in powder and gauze and with glycerine; the preparations of mercury, particularly the bi-chloride; eucalyptus: oxide zinci; bismuth; salicylic and boracic acids, iodine, potassæ permanganate, etc. In connection with the above, pertinently belong ligatures prepared in various ways; drainage tubes of rubber, bone and hair; and wood-wool, peat, etc.

I append hereto the formula I use, and which I prepare in person in my office, and for appearance and usefulness I have not found excelled by the make of any of the manufacturers whom I have patronized.

I also show you samples of ligatures, gauze bandages, etc., made by the formula to which I have referred.

Let me hope, gentlemen, when I have read you a few cases, selected from a number occurring in my home practice, that those of you who have not adopted the practice of the new surgery, as regards the treatment of wounds, will prepare yourselves, and in the future sufficiently test this subject. I shall then not fear, when you see the ease and readiness with which you can do your surgical work, the benefit which I know will be conferred upon your patients, that you will adopt a method, (to paraphrase the words of an other), which is based upon scientific principles and well established truths; a method that makes every

wound, no matter of what part of the body, a sub-cutaneous one. By its aid you will drive such diseases as gangrene, erysipelas, pyæmia and septiæmia out of your practice. In fine, you will be enabled to guarantee to every patient a freedom from those special dangers which were the cause of the high mortality so often observed in days past and gone.

PART II.

TRANSVERSE CUT OF THE ABDOMEN WITH CAVITY OPENED.

A railroad employé in a difficulty received a cut twelve inches in length, horizontally across the epigastric region, with a large knife or razor; also a deep cut across the posterior aspect of the arm, midway between the shoulder and elbow. I saw him half an hour after receiving the cut: the cavity of the abdomen was opened four or five inches, with colon protruding, and sufficient inside injury to give rise to more or less hemorrhage. The wound extended nearly to the peritoneum for several inches, from either extremity of the opening into the cavity.

The man would not allow me to touch him without an anaesthetic; gave ether; used tortion to restrain hemorrhage from a number of small arterial branches over the surface of the colon and mesentery; with uninterrupted antiseptic gut ligature approximated the

peritoneum, after thoroughly cleansing the cavity with attenuated carbolic acid solution; washed the cut edges and abdominal surface with sublimate solution; used uninterrupted deep sutures of antiseptic silk to approximate the wound; intervening shallow sutures of the same material to approximate skin well; applied iodoform gauze, then several layers of sublimated gauze, borated cotton, rubber tissue, and over all Von Brun's bandage.

I forced the arm as far backward as possible; and, while an assistant held the member in that position; approximated the divided ends of the muscles and stitched them together thoroughly with antiseptic gut ligatures; and, after dressing, as I had done, the abdominal cut, maintained the arm in a position as far backward as practicable.

I will state here that I obtained from Dr. Hunter, at the Women's Hospital, New York, the idea of stitching the peritoneum together with fine antiseptic gut ligature before putting in the deep sutures of approximation. This I had seen him do in laparotomies, and I have pursued the same plan myself in similar operations. Whether or not the plan is original with Dr. Hunter, I cannot say. I do not remember having seen the suggestion from any other operator. I am favorably impressed with the procedure, and will continue it in any future operations of like character.

Six days subsequent to my first visit, I removed the dressing; found no pus, fever, redness, or ought else militating against other than an excellent condition of patient; removed all sutures except the gut

ligatures in the peritoneum, they being out of sight and probably absorbed; complete union *primam intentionem* had taken place. The same condition was found in the arm. I now applied dry sublimated gauze and Von Brun's bandage, and, on the following day, called to exhibit the patient to a medical friend, when we found that he had left his bed and gone out into the city, enjoying the company of friends.

· AMPUTATION OF MAMMARY GLAND WITH AXILLARY GLANDS.

Within the past thirty-three months I have had occasion to partially or completely excise the mammary gland eight times: five times for carcinoma; twice for adenoma, partial, and once for sarcoma. In four of the cases the axillary glands were removed as well. As far as I am informed recurrence of the disease has taken place in one case only, and death resulted after more than a year of comparative comfort. One case I have never heard from since her return to the county from which she came, and, therefore, that case must needs be discarded in forming conclusions of the value of the operation prolonging life in malignant disease.

Whilst attending a clinic of Prof. Thomas, two years ago, some gentlemen asked that distinguished man for a description of a then new operation he had performed for the removal of mammary tumour of a non-malignant or benign character. He premised the answer by something about as follows, as well as I can now recall :

"An Irish gentleman instructed his son to get ready to make his first visit to Dumbarton Fair. After the preparation had been made, and the young man was ready to start, he asked his father what he should do when he arrived at the fair.

"Said pater familias, 'Strike! Strike!'"

It is to be presumed the youth was equipped with that index of the Irishman's readiness to defend himself, the shelallah. Said Dr. Thomas:

"Whenever you find a tumour of the female breast, strike! remove it as quickly as you get the opportunity; it matters little what may be its exact nature. Remove it first, and make the diagnosis afterwards, for," continued he, "a woman with a tumour of the breast is a disturbed, an uneasy woman: she is constantly feeling the growth; she is displaying it upon all occasions to her relatives and all the women of the neighborhood; her mind is very much exercised as to its nature and consequences, and to that degree that digestive and neurasthenic manifestations will ensue; and, furthermore, a growth which to-day might be determined benign confers an uncertain immunity that it may not become malignant in the future."

Dr. Hutcherson, of London holds similar views to those of Dr. Thomas.

As I cannot recall to mind that I ever saw in print the operation mentioned above, a brief description would not be out of place. The patient being requested to assume a standing position, the chest bare and the gland pendant, with a colored pencil a line is drawn semi-circularly around the crease at the junc-

tion of the gland and the chest wall. The patient then being etherized in a recumbent position, the incision is made to follow the pencil line, the integument or gland is then turned up and the tumour removed. When bleeding is staunched and the parts rendered aseptic and dry, the upturned portion is replaced and, drainage being provided for, the line of incision is then neatly stitched with fine Chinese silk. Little deformity is now observed, and the woman will then take more pride in the gland than had it been prominently scarred. At all events, the breast will be more presentable than would otherwise have been the case.

Of late years it has become quite a common practice, when surgeons remove the mammary gland for malignant disease, to remove the axillary gland as well. For several years, when malignancy was apprehended, it has been my invariable custom to thoroughly dissect away all the glands of the axilla, upon the idea suggested, that in so doing I might prevent recurrence of the disease at this place or elsewhere in the system from the migration of the malignant cells.

A few weeks ago, I had occasion to remove a carcinomatous breast, as well as the axillary glands, in the person of a Tarrant county lady aged sixty. The operation performed and the treatment pursued, as illustrative of the subject of antiseptic surgery, was as follows: The line of incision I extended from the axilla to the superior portion of the gland, then elliptically on either side of the gland, uniting at the inferior part of the gland or just below. This incision we carry through the integument and superficial fascia;

seizing then the lower angle of incisions thus made, we rapidly follow up the initiatory incision, putting on artery forceps as needed, till the gland is entirely removed from the subjacent muscle. Afterwards we very carefully remove every gland, (infiltrated or not), to be found in the axilla, and as far as the finger will reach. After the vessels are twisted or tied with anti-septic gut ligature, the wound is thoroughly irrigated with a sublimate solution, a half grain to the ounce of water, or 1 to 1,000 approximately, the integument having been previously treated similarly. In the case here referred to, after the above plan had been well executed, antiseptic silk ligatures were placed in position for approximating the flaps; rubber drainage tubes previously steeped in strong sublimate solution were placed at either extremity of the cut—one pointing to superior portion of the axilla, the other toward the umbillicus; the stitches were tied approximating the parts closely. The surface of the chest was now irrigated with sublimate solution; the line of the incision covered with iodoform gauze; over the layer of iodoform gauze I placed layers of sublimate gauze, till six or seven layers covered the line of incision, which approximated fourteen inches in length. Over the dressing already described, I applied borated cotton to the thickness of two or three inches; over this, rubber tissue; and over all and around the chest, a circular bandage three inches wide, prepared after Van Brun's formula.

From this to the eighth day, when the dressing was removed, there had been no rise in temperature, but

little increase in frequency of pulse; indeed no increased degree of discomfort above that which existed prior to the operation; there was no suppuration; union was complete throughout the line of incision, except an inch at a point at which the integument was not well approximated. The drainage tubes were removed and squeezed through the fingers, but no discharge was found. Having now irrigated with sublimate solution the dry canals just vacated by the drainage tubes, I applied gauze to the openings with borated cotton and antiseptic bandage— and the second dressing was completed. A few days subsequently the lady returned home apparently well, and so far as my information goes, has not had further trouble.

KNEE JOINT INJURY.

On or near the eighth of November, 1884, the adopted son, aged five, of one of the best citizens of Fort Worth, was run over by a street car, and carried in to the office of the nearest physician to the point where the accident occurred. I understood that he had received a lacerated, perhaps contused wound on the external side of the left knee, probably two or three inches in length. This I learn was approximated with stitches and a bandage applied. I further learned that on the next or second day following, discolored spots appeared over the surface of the joint. I will not undertake to state anything of the condition or progress of the case, from the first dressing till the case came under the professional charge of Dr. W. A. Adams and myself, six weeks subsequent to the recep-

tion of the injury, as I have no data other than the impressions of those whom one would not expect to be especially versed in such matters.

When first seen, the condition of the child was, briefly, as follows: The limb was wrapped in absorbent cotton upon which vaseline had been applied and a tail bandage to secure dressing; the limb was flexed to an extreme with supports beneath, consisting of small pillows; the limb was swollen from hip to toes; the integuments covering the anterior and lateral aspects of the knee joint were gone, the parts covered with pus. An opening existed on either side of the joint pointing toward the popliteal space. There was a small opening made for evacuating pus about two and one-half inches above the joint over the vastus extermus muscle. There was fluctuation extending to the trochanter major, following the connective tissue spaces between the anterior and lateral muscles of the thigh. By reason of the flexed position of the leg, the integument being gone, and the ulceration and absorption induced by such position the joint capsule had given away and opened, for an inch or more, just at the superior border of the external articular surface of the tibia, so that the internal semilunar and perhaps the border of the crucial ligament might have been seen. There were two or three abscesses upon the hip and back, one upon the upper lip, and two upon the head. The child's pulse was 160 to 170, temperature $105\frac{1}{2}$; slept only as anodynes were given; his bowels were disturbed, and so extreme were his sufferings and apprehension of induced pain, that the

sight of a physician, his touch, even the inadvertent mention of a doctor's name, were sufficient to induce screams and supplications that were trying to witness, and might have been heard a block or more away. Time and the scope of this paper interdict further elaboration of the interesting clinical features presented in the case of this child, his injuries and the septo-pyæmia resulting therefrom at the time he passed under our care.

Treatment: After as moderate a degree of anaesthesia as would suffice in the case, incisions were made of sufficient length and number to drain the pus cavities as well as the abscesses. The parts were then thoroughly irrigated inside and out with sublimate solution, at first 1 to 1,000. The limb, (under the anaesthetic), was extended to the proper degree. Iodoform gauze was first applied, and over that a number of layers of sublimate gauze, then borated cotton, rubber tissue and Von Brun's bandage; sand bags were improvised and placed upon either side of the leg, in order to prevent rotation of the foot and leg, as well as to aid in securing rest to the joint. An anodyne, when absolutely indicated, was directed; antipyretics to protect the heart; and the methodical enforcement of easily assimilable food, with Nicholson's extract of malt as constructive agent and stimulant.

As there existed so large a surface requiring the antiseptic process, it was thought advisable at first to renew the dressings rather frequently.

Day after day these dressings were renewed for a

time, and the dietetics and therapeutics, as already indicated, strenuously and persistently followed.

Within a few days the opening into the joint was closed by a granulation process, materially influenced by the co-apтation of the edges of the opening, resulting from the extension of the leg; the discharge assumed daily a more laudable appearance and gradually decreased; the openings pointing toward the popliteal space also ceased to discharge and filled up; the febrile movement gradually lessened; pulse diminished in frequency and quickness as days and weeks came and were gone.

April 8, the day of this writing, the boy plays over the floor, and is learning to use crutches. There exists yet a point over the inner side of the knee as large as a dollar, healthy in appearance and undergoing peripheral cicatrization; and, though, the joint will be somewhat misshapen and partially ankylosed, he will soon be discharged with the hope and belief that the limb will prove useful.

FRACTURE OF THE SKULL.*

On the twenty-seventh of July, 1884, Townsend McVeigh, aged 9 years, and living three miles east of Sherman, had his skull crushed on the left side, above the left ear, for the space of one and a half inches in length by three-quarters of an inch wide. Said he fell, but beyond this knows nothing. The wound of the scalp had, rather than otherwise, the appearance of a punctured one, about as large as the end of a man's

*Reported by J. B. Stinson, M. D., Sherman, Texas.

thumb. When first seen, there was some brain substance observed oozing out with the blood. Assisted by my partner, Dr. F. D. Thompson, the patient was chloroformed and the wound enlarged from before backward, somewhat circularly, to the extent of about two and a half inches. A piece of bone extending the whole length of the fracture was pressed inward in such a manner that the elevator could not be gotten beneath it. In order to accomplish its removal, the trephine was used. After removing the outer table, I found that I could accomplish the end in view by leaving the inner table intact, which was done. This enabled me to so raise the fragment and clip into it with bone forceps, when it was easily removed, with all spiculae, of which there were several. A V-shaped piece as large as one's thumb nail had been driven through the dura mater into the brain. This was removed. An artery in the dura mater was wounded by this fragment, and bled freely, but ceased before the operation was concluded. All projecting points of bone were now clipped off with bone forceps, the wound cleaned and the scalp brought together with four silk sutures. These were removed on the fourth day, union by first intention seeming almost perfect. Rubber adhesive strips were then applied. During the afternoon of this day a severe hemorrhage set in from the wound, and the lips began to gape. Hemorrhage ceased before I reached the patient. I brought the wound together with adhesive strips, again hoping that all would yet be well, but fearing an outbreak of the hemorrhage at any time. From this time on, a mass

was observed to bulge up in the centre, and to gape the lips open where not brought together with the plasters. This mass, on its outer surface, was, or seemed to be, ulcerating and breaking down in the form of pus. I hoped, by proper adaptation of the scalp, that, by pressure from this source, it would disappear, or, at least, become blended with the scalp. On the morning of the seventh day after the injury, he was seized with tetanic twitchings of the muscles of the right side, which soon became general, convulsing the whole body, though not obliterating consciousness, as he stated that he knew everything going on around him, though he could not speak. For a day or two preceding this attack, he complained of a tight feeling about the wound, though no fever was noticed. These convulsive movements yielded promptly to $\frac{1}{4}$ of a grain morphia and 1-150 of a grain of atrophia, given hypodermically. On the next morning he had a similar seizure, which again yielded to the same treatment. Thinking the mass, which was now about as large as an ounce ball, might be pressing on the brain, and thus cause the convulsions, I thought it best to cut it away, in the hope of giving relief, or, at least, to open up a solution as to the cause. Dr. W. E. Saunders, by request, accompanied me about noon of the day of the second convolution to the bedside of the patient. We found him again threatened with convulsions. Dr. S. suggested that the protrusion might be a hernia of the brain. It was thought best, however, as its outer surface seemed to be in a sloughing condition, to trim it down to a level with the dura mater, which

I did, after the patient was chloroformed by Dr. Saunders. The amount thus cut away would probably half fill a teaspoon. After this was done, the part filling the rent in the dura mater was pushed aside with a probe, when out gushed near a half ounce of cream-colored pus from beneath the dura mater. Pressure from this source was doubtless the cause of the convulsions. After this, no more twitchings were observable, and the right arm, which had been partially paralyzed, improved greatly. The scalp was fresh shaven, and the lips of the wound again brought together with adhesive strips. Within the next two days, the protrusion was again observed, and continued gradually to enlarge, despite my efforts to prevent it. I was now convinced that it was the brain protruding. Nine days after this operation (on the thirteenth of August), the outer surface of the projecting mass seemed to be sloughing, being tightly bound by the edges of the rent in the dura mater. I resolved again to cut it away, and this time to again stitch up the scalp, in the hope of healing it over. This I did on the morning of the thirteenth of August. I would estimate the amount thus cut away in both operations to be about a half tablespoonful. The scalp was now nicely brought together with silk sutures, and high hopes entertained of a speedy recovery. The next day an erysipelatous blush appeared around the wound, and spread rapidly in all directions, until near one-half the head and face, including the ear on that side, was involved. This was accompanied with considerable fear, but yielded promptly to quinine

and iron, internally, and a lotion of muriatic tincture of iron and water locally. Two days after this operation, the suture gave way, and the protrusion again appeared. The parents now requested Dr. Saunders to see him again. At his suggestion, a thin sheet of lead, cut to fit over the wound, was applied, after replacing the mass as well as could be, and the whole held in place with a roller bandage. The next morning the protrusion was as great as ever, and I now, for the first time, succeeded in replacing it within the dura mater. I then, with adhesive plasters, drew the scalp together. The next morning the protrusion was as bad as ever. Replaced it again, and dressed as before. I intended, if no improvement the next morning, to attempt the operation, as a *dernier resort*, of stitching up the rent in the dura mater with catgut or silk thread. For this procedure I have no precedent, not having seen it recommended nor heard of its having been done. On this evening, his parents concluded to place him under the treatment of their former family physician, Dr. E. J. Beall, of Fort Worth, and left with him for that city.

I should have stated that this little patient, during the time he was under my charge, had three attacks of chills, at intervals of seven days, but which yielded promptly to quinine. He had had frequent attacks for several months previous to the injury.

It is remarkable to note the perfect retention of his intellect during all this time, considering the many hindrances to recovery, viz: First, the receipt of the injury with accompanying hemorrhage and loss of

brain substance ; second, the hemorrhage on fourth day ; third, the convulsions and abscess, with the loss of brain substance from that source and two subsequent operations ; fourth, the erysipelas, and fifth, the attacks of malarial fever.

HERNIA CEREBRI.*

Townsend McVeigh, 9 years of age, had always enjoyed good health (except an occasional malarial attack), was of kind disposition, sprightly in mind and physically active. I first saw him at the Grand View hotel on the twenty-second day of August, 1884. An examination showed an irregular opening in the skull, very nearly the point at which the left superciliary ridge crosses the coronal suture, possibly a short distance above ; and from that opening was protruded a mass of brain substance very nearly the size of a walnut. This mass overlapped the edges of the opening, and, by reason of the length of time since dressing, growing out of the environments incident to travel, was suppurating quite freely ; and from the odor and appearance was not of an aseptic character or the laudable pus of the old surgery. This mass constituted the hernia cerebri, which, with the injury that caused it, gave origin to the condition and symptoms which I will undertake to briefly describe.

The child was emaciated to an extraordinary degree ; his last night had been one of restlessness, with twitchings of face and limbs, sudden cries, headache of an

*Report of previous case continued after being transferred to myself for treatment.

intense character, and loss of appetite ; his pulse 115, temperature 103. There existed more or less paresis of the right arm and leg and right side of the face ; intellect unclouded. The esthesiometer indicated impaired power of recognizing points upon the dorsal portion of the arm and hand. On the anterior portion of the arm and hand, could not discriminate whether palm or arm was touched.

The term cerebral hernia, as used by the English surgeons, has been objected to ; and, I think, with good reason, because the condition which they have so named does not resemble a rupture or protrusion of the brain with its membranes from its proper cavity ; but is the result of a traumatism of the brain investments. The matter protruding may be brain substance, histologically normal ; may be blood extravasated under the pia mater ; or a granulation material from the brain, and intended as a conservative effort. These different conditions surely merit a greater nicety in nomenclature, although some American writers have adopted the term hernia cerebri, as do most English. Dr. Agnew, among the former, for reasons unnecessary to state, accepts and prefers the term fungus cerebri. He does this, I think, with as great a measure of inconsistency as those who adopt the term heading this case, as a thorough examination of the protrusion in different cases will indicate. The case at issue, as regards the nature of the protrusion, showed brain matter ; the microscopic examination indicated blood and exudation corpuscles, with nerve tubes, etc. This would show that protrusion began immediately

after the traumatism of the membranes. Later on changes in structure would naturally follow and vary in different portions of the tumour, as time existed for changes to occur incident to the influence of natural causes. There are those who think that inflammatory—that an exudation process is necessary ere the extrusion is produced. In cases in which it is admitted that the extruded mass is true unchanged brain tissue, what is the condition behind the mass? Are the vital forces renewing brain material within, or is a vacuum left? Does the remaining brain substance contract from intracranial pressure and extracranial withdrawal of force? A case is reported in which a large mass extruded was accidentally removed and recovery followed; ten years afterward a *post mortem* revealed a hollow vacant space in area equalling the part long lost. Rokitanski says that he has known enlargement of ventricles to be commensurate with the loss.

Another interesting point connected with the case under consideration, is its bearing upon cerebral localization. There was motor and sensory disturbance; no mental that could be recognized by myself or the father of the boy. The injury would indicate, considering the point of exit of the mass, that damage had been done to the anterior ascending frontal convolution and the ascending parietal convolution, these convolutions lying upon either side of the fissure of Rolandi. There existed a paretic condition of the right leg and arm, and awkward, irregular movement as the child advanced toward recovery, and all along when he exercised his will power. This fact would indicate

that injury had been inflicted upon the ascending frontal convolution, near the upper extremity of the fissure of Rolandi; and here is located by Ferrier the center of irregular or complex leg and arm movements. Irregular or combined movement disturbance of the hand and wrist, the prehensile movements, were manifestly disordered. This, according to Ferrier, would indicate injury to the ascending parietal gyrus. That the mental qualities were unimpaired would show, as physiologists have claimed, that the mental powers are "the result of the different combinations of memories of past events and the activity of groups of cells, which are probably located in the frontal lobes." The point of skull injury would not indicate lesions of the frontal lobes or their convolutions. Considering, then, the injuries in the case, and summing its gross physiology, we infer a beautiful harmony with several points connected with the subject of cerebral localization. In transcending the scope of this paper—that of presenting, by way of supplement, a case or so illustrative of the subject of antiseptic surgery, the interest attaching to the points of digression sufficiently apologizes.

It has already been stated that the mass extruded was in size like a walnut, that free suppuration was present, and that the pus was, in all likelihood, septic; for, indeed, the atmosphere of railway cars would likely induce that way. The tumour was subjected to pressure, for which there is very much authority, with which, however, I cannot agree. That the boy had

CIRCUMFERENCE MEASUREMENT:

1:2— $6\frac{1}{16}$ inches.3:4— $5\frac{1}{4}$ inches.

HERNIA OR FUNGUS CEREBRI.

[NATURAL SIZE.]

Removed by Dr. E. J. BEALL from a child whose skull had been broken by the kick of a horse.

A—Incision for microscopical examination. **B**—Pedicle.

been under judicious medication and dietetics, as far as I could learn, I think there can be no question.

The first duty undertaken by myself was to render the protrusion and surrounding surfaces as thoroughly and expeditiously aseptic as my idea and practice of antiseptic surgery could accomplish. With this object in view, I removed the "lead plate" and its compression bandage, thoroughly washed the parts with sublimate solution (1 to 1000), and dusted the apex with iodoform (dissolved in ether and evaporated). I placed over the mass quite a number of layers of sublimate gauze of my own make (I prepare all my dressings) and over this rubber tissue, and retained the dressings with Von Brun's antiseptic bandage, smoothly but not tightly applied; for I could intensify motor and sensory disturbance by pressure. Quinine was continued through part of the day, which had been suggested by Dr. Stinson; easily digested and nutritious food was suggested, ammonium bromide and ergot in aqua camphor at night or in the day time if indicated by twitchings, cephalalgia and startings with cries; additionally cod-liver oil was administered after meals. At the expiration of twenty-four hours, I renewed dressings and reapplied as at the first examination of the case, and continued the same medication and food. I found rather less pus, and apparently improved in quality; temperature and pulse somewhat reduced, but not modified to the degree I had expected.

Third day, removed and renewed dressings as on previous day; condition indicative of little change

other than the mass had increased in size to perhaps as large again as when first observed.

Fourth day, finding condition about the same, and as temperature and pulse remained elevated, I turned the tumour aside and carefully examined for infra-her-nial abscess. I found an abscess and opened it, and within the abscess a piece of bone which had been driven in at or prior to the operation. The tumour had, in the meantime, still further increased in width and in latitude, yet I feared pressure and I feared excision : the books with the mortality after either procedure did not furnish any encouragement. Strict antiseptic dressings were reapplied.

Within two or three days the hernia had progressively increased in size; fever had abated, however; pulse somewhat improved in quality; appetite better; pus had materially diminished in quantity, and was doubtless aseptic. Upon the whole, the outlook was more encouraging generally, except the increasing development of the protrusion. I now discontinued quinine, as no indication existed for its antipyretic properties.

At this juncture, twelve or fifteen days having elapsed, assisted by Dr. Adams, I methodically each day, after thorough sublimate rinsing (1 to 2000), and with iodoform upon the apex, applied a circular bandage around the tumour, which, in size, exceeded that shown in the electrotype. This circular bandage was made of sublimated gauze two inches wide and two yards long; and, additionally, with the view of forcing a pedicle, applied a sublimated bandage half an

inch wide around the base of the mass close to the scalp; around and over all, sublimated jute, or carbolated jute, with rubber tissue covering all, except the retention bandage made after Von Brun's formula. After a time, the jute (carbolated or sublimated) served a good purpose—that of maintaining the tumour erect—as the small bandage at the base did the important work it was intended to accomplish—that of pedicle formation. I endeavored to keep the constriction apace with the peripheric reparation. How well I succeeded is indicated in the illustration, the undulatory shading of the base of the tumour showing the gradual formation of the pedicle. With the gradual formation of the pedicle, there was, *pari passu*, gradually increasing cicatrization peripherically, as regards the scalp opening through which the mass protruded. I endeavored to have the two bandages so applied as that I would not induce strangulation and sloughing. In one or two instances, not having the broad, circular compression and the narrower constriction bandage properly adjusted, as to degree of tightness drawn, a small amount of apex necrosis was induced. This I quickly curretted away, and stuffed the oozing capillaries and lymph channels with iodoform, after sublimate irrigation, endeavoring, thereby, to head off all micro-organisms from entrance through these channels to parts within, and thus avoid their multiplication, and, per adventure, the robbery from me of my little patient. I verily believe that just here we strike the key-note to the non-success so often attending these cases (*i. e.*, abscess formation) under the treat-

ment of the older surgery. To strengthen the observation, I confidently refer you to Volkman and the wonderful results which have attended his operations about the head, since his adoption, eight years ago, of the practice of a strict, uncompromising system of antiseptic surgery.

When under a strict antisepsis, with which I long ago became enamored, and to which I am now satisfactorily wedded, coupled with the compression and constriction process, to which, so far as I know, I have no predecessor in the management of hernia cerebri, I had seen the base of this great mass grow daily smaller and smaller, till it reminded one of an apple at the end of a riding whip; when under constructive medication and dietetics so faithfully followed, the roses were blooming again upon the bright little fellow's cheeks; when his tread and grip had become more elastic and strong; when, in my own mind, I looked no further than one day when I should transfix the small pedicle with a pin; and, after a ligature beneath the pin, would sever a tower from the citadel of thought, an unlucky hour came—a stone, hurled from the hand of a playmate, struck the tumour, and, though well supported with jute or bor-salicylated cotton, was partially severed. Free bleeding followed; great nervousness and pain of head; startings, cries and febrile movements were renewed, as in the early days of his coming. In this dilemma, I deemed it best to detach the mass in the manner I had contemplated, and as has already been described.

Under treatment, about as described already, in a

few days all unpleasant symptoms passed away, and the little fellow left for his Sherman home, well (save a slight paresis), and as happy in the thought of soon joining his family as the birds he should see as he so swiftly sped on the iron horse—a living monument to antiseptic surgery—a bright jewel in the crown of the immortal Lister.





